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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ashok Singhal

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EXAMINER

PATEL, NIMESH G

ART UNIT

PAPER NUMBER

2111

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/883,681	Applicant(s) SINGHAL ET AL.	
	Examiner NIMESH G. PATEL	Art Unit 2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9,13,16,18,19,21-25,29 and 35-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9,13,16,18,19,21-25,29 and 35-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13, 18-19, 21-25, 29, 35, 38-50, 52-54 and 56-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Judd(US 5,768,623).

3. Regarding claim 18, Judd discloses a node controller(Figure 7, 81) for a node(Figure 7, 80-81, 86-87) in a data storage system having at least two nodes(Figure 7, Node1: 80-81, 86-87; Node2: 82-83, 94-95), each node comprising one computer-memory complex(Figure 7, 80) and one node controller(Figure 7, 81) distinct from said one computer-memory complex, the node controller comprising: a memory controller operable to interface the node controller with a cluster memory that stores data being transferred through the node(Figure 6, 68; Column 1, Lines 55-60), and a link coupled to another node controller(Figure 7, 82) in another node of the data storage system; an input/output bus interface(Figure 7, 87) operable to interface the node controller with an input/output bus coupled to a computer-memory complex of the node, and at least one host device(Figure 7, 86) and at least one storage device(Figure 7, 92); a logic engine(Figure 5, 42; Figure 6, 70) coupled to (1) the memory controller (2) the link, and (3) the plurality of input/output bus interface; wherein in a first type of data transfer, the logic engine performs a logic operation to a plurality of storage data from one of a plurality of data sources in the data storage system and writes the result of the logic operation to one of a plurality of data destinations in the data storage system, the data sources comprising the cluster memory and the input/output bus interface, and the data destinations comprising, the cluster memory, the

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link, and the input/output bus interface, the logic operation being used to calculate a parity data for writing a full or a partial RAID stripe to reconstruct a lost data using the parity data(Column 5, Lines 65-66; Column 2, Lines 21-22).

4. Regarding claim 13, Judd discloses a node controller, wherein the node controller is implemented as an integrated circuit device(Figure 2, 22; Column 6, Line 4-5).

5. Regarding claim 19, Judd discloses a node controller, wherein, in a second type of data transfer, input/output bus interface writes a data into the cluster memory and in response, the logic engine copies the data to the another node via the link(Column 10, Lines 3-7).

6. Regarding claim 21, Judd discloses a node controller wherein the input/output bus interface comprises a peripheral component interconnect (PCI) control interface and the input/output bus comprises a PCI bus(Column 5, Line 66-Column 6, Line 2).

7. Regarding claim 22, Judd discloses a node controller, wherein the computer-memory complex manages the PCI bus (Column 5, Line 66-Column 6, Line 2).

8. Regarding claim 23, Judd discloses disclose a node controller wherein the computer-memory complex supports a service selected from the group consisting of a HTTP service, a NFS service, and a CIFS service (Column 2, Lines 5-8).

9. Regarding claim 24, Judd discloses a node controller, wherein the computer-memory complex is not burdened with temporarily storing data being transferred thorough the node in the computer-memory complex (Figure 6, 68; Column 1, Lines 55-60).

10. Regarding claim 25, Judd discloses a node controller, wherein the logic engine comprises an XOR engine (Figure 5, 42).

11. Claims 29, 35, 38-50, 52-54 and 56-61 recite similar limitations as claims 13, 18-19 and 21-25 and therefore are similarly rejected for the reasons above.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 9, 16, 36-37, 51 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd in view of what is well known in the art.

14. Regarding claims 9, 36 and 51, Judd does not specifically disclose a node controller, further comprising command queues coupled to the logic engine, the command queues operable to store logic control blocks which can be processed by the logic engine. However, official notice is being taken that command queues are well known in the art and it would have been obvious to one of ordinary skill in the art to use command queues in the system of Judd, since this would enable the queuing of the command and free up the computer-memory complex to work on other operations if the node controller is busy with other operations.

15. Regarding claims 16, 37 and 55, official notice is being taken that it is well known in the art that command queues have a producer register and a consumer register and it would be obvious to one of ordinary skill in the art use these registers to specify the addresses to read and write the commands in the command queue.

Response to Arguments

16. Applicant's arguments filed December 12, 2007 have been fully considered but they are not persuasive.

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17. In response to applicant's argument that the interpretation of Judd et al. by the examiner is incorrect since hosts 80 and 81 of Judd are separate host systems and that Judd shows hosts 80 and 81 as individual nodes in SSA loop 98 that connects all the host, examiner respectfully disagrees. A node can comprise any number of devices. Examiner has reasonably interpreted a node to include both hosts 80 and 81(Figure 7).

18. In response to applicant's argument that examiner's interpretation of Judd leaves it without an element that corresponds to the host recited in claim 81 since the examiner erroneously cited adapter 86 as the recited host, examiner respectfully disagrees. The specification describes a host device as a processing device that may include various peripheral devices(Page 6, Lines 3-7). Judd clearly shows adapter 86 as a peripheral device.

19. Thus, applicant's arguments are not persuasive.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIMESH G. PATEL whose telephone number is (571)272-3640. The examiner can normally be reached on M-F, 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinehart H. Mark can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nimesh G Patel
Examiner
Art Unit 2111

/Glenn A. Auve/
Primary Examiner, Art Unit 2111